

Work Order ID 132824

Monday, May 11, 2015 10:03:26 AM

132824

RUSH

Page 1

Item ID: D5155-3 Accept *N900040100* Setup Start *NS1*

Revision ID: PRELIM

Item Name: Co-Pilot Collective Head (212)

Start Date: 5/11/2015 Start Qty: 6.00 *6*

Required Date: 5/15/2015 Req'd Qty: 6.00 *6*

Reference:

Cust Item ID: ~~PRELIMINARY~~ *NS2*

Customer: **ISSUE**

Approvals: Process Plan: MCS Date: MAY 11 2015 Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D5155	<u>Rev A</u>

100	Cut blanks as per folio	0.00				6	6		DAS 08 9-89
100		0.00		15/05/13					
Bandsaw	Memo								
Jeaspa Bandsaw	CUT BLANK AT 5.000"								

110		0.00				6	6		DAS 14 9-89
110		0.00		15/05/13					
HAAS 5AXIS	Memo								
HAAS CNC vertical machine #5	MACHINE AS PER DWG & FOLIO FB349/ D5155-3								
	FOLIO REV: <u>AA</u>								
	DWG REV: <u>A</u>								

DO NOT BUFF OR POLISH PART

DEBURR

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:15%;">Skid-tube ☐</td> <td style="width:15%;">Cross tube ☐</td> <td style="width:15%;">Water Jet ☐</td> <td style="width:15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																						
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																						
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																						
Large Fab ☐	Composite ☐	Supplier ☐																							
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																		
Description Work Order Deviation				Disposition																					
Root Cause		FAULT CATEGORY																							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐																				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐																				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐																				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐																				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐																				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐																				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐																				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐																				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐																				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐																				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____																							
Misidentified ☐	Past Due ☐																								

Work Order ID 132824***132824***

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Monday, May 11, 2015 10:03:26 AM

Item ID: D5155-3

Accept

N900040100Setup Start ***NS1***

Revision ID: PRELIM

Stop ***NS2***

Item Name: Co-Pilot Collective Head (212)

Start Date: 5/11/2015 Start Qty: 6.00

6

Cust Item ID:

Required Date: 5/15/2015 Req'd Qty: 6.00

6

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start ***NR1***

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

120

QC2- Inspect parts off machine FAI/FAIB

0.00

120

QC

Memo

0.00

Quality Control

DAS
14
9-89

15/05/14

130

QC8- Inspect parts - second check

0.00

130

QC

Memo

0.00

Quality Control

DAS
44
9-89

15/05/14

140

QC5- Inspect part completeness to step on W/O

0.00

140

QC

Memo

0.00

Quality Control

DAS
38
9-89

MAY 20 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Work Order ID 132824***132824***

Page 3

Monday, May 11, 2015 10:03:26 AM

Item ID: D5155-3 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: PRELIM Stop ***NS2***
Item Name: Co-Pilot Collective Head (212)
Start Date: 5/11/2015 Start Qty: 6.00 ***6*** Cust Item ID:
Required Date: 5/15/2015 Req'd Qty: 6.00 ***6*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	Identify as per dwg & Stock Location: <u>st 149</u>	0.00				6	27		
160									
Packaging	Memo	0.00							
Packaging									
170	QC21- Final Inspection - Work Order Release	0.00							
170									
QC	Memo	0.00							
Quality Control									

MLJ MAY 20 2015

MLJ MAY 20 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Picklist Print

Monday, May 11, 2015 10:03:31 AM

Page 1

Work Order ID: 132824

132824

Parent Item: D5155-3

D5155-3

Parent Item Name: Co-Pilot Collective Head (212)

Start Date: 5/11/2015

Required Date: 5/15/2015

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP REV.A NEW ISSUE JFS 15/01/14 VERIFIED BY: JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6B4.500X4.500		Purchased	No			100	f	4.4000	0.417	3			

M6061T6B4 500X4 500

6061-T6 Aluminum Bar 4.500" X 4.500"

15/05/13

Location	Loc Qty	Loc Code
MAT	4	
m131700	4	
MAT007	0.4	
→ m127713	0.4	

2.440[†]

DQA: _____ Date: _____



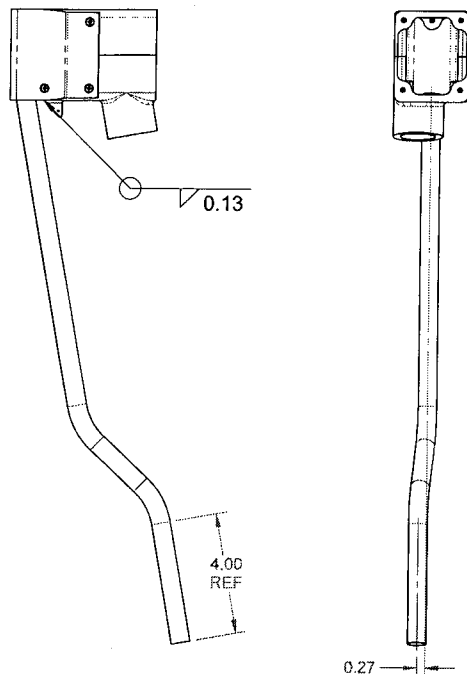
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

ITEM	QTY -041	P/N	DESCRIPTION
1	X	D5155-041	CO-PILOT COLLECTIVE HEAD ASSEMBLY (205)
2	1	D4410-7	CONDUIT
3	1	D5155-1	CO-PILOT COLLECTIVE HEAD (205)
4	1	D5155-9	CO-PILOT COLLECTIVE HEAD (205)
5	1	D5156-9	BACK PLATE
6	11	90296A108	HELI-COIL INSERT (6-32 X 0.276)
7	2	MS16562-130	SLOTTED SPRING PIN
8	7	MS24693-24B	SCREW, CSK 100*

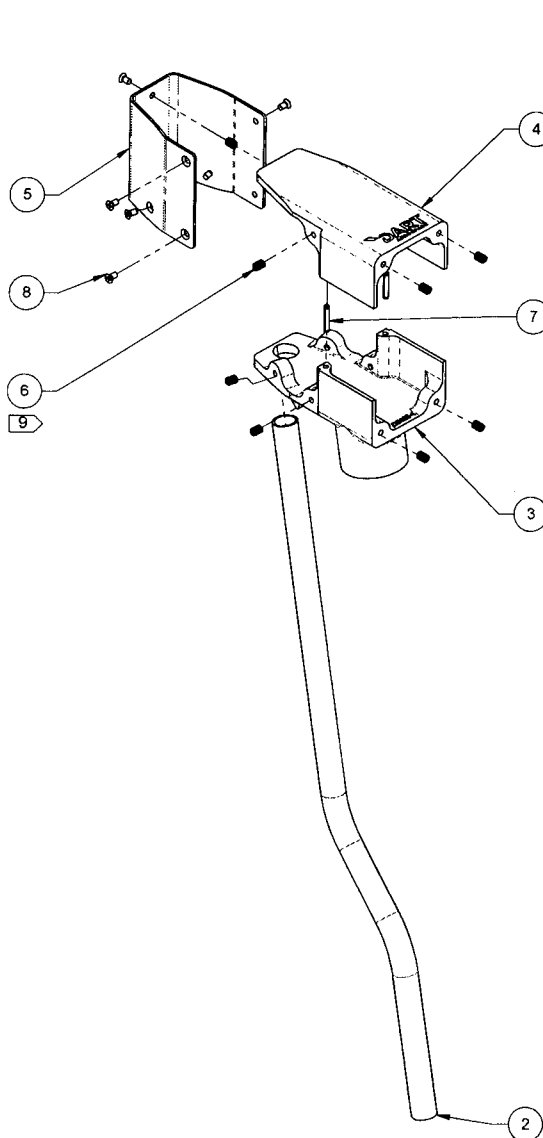


D5155-041 WELDING DETAIL

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: ANODIZE BLACK PER MIL-A-8625F TYPE I OR IB OR IC OR II OR IIB CLASS 2 AFTER WELDING
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 1.08 lbs
- 8) WELD PER DART QSI 004
- 9) INSTALL AFTER ANODIZING

D5155-041 CO-PILOT COLLECTIVE HEAD ASSEMBLY (205)

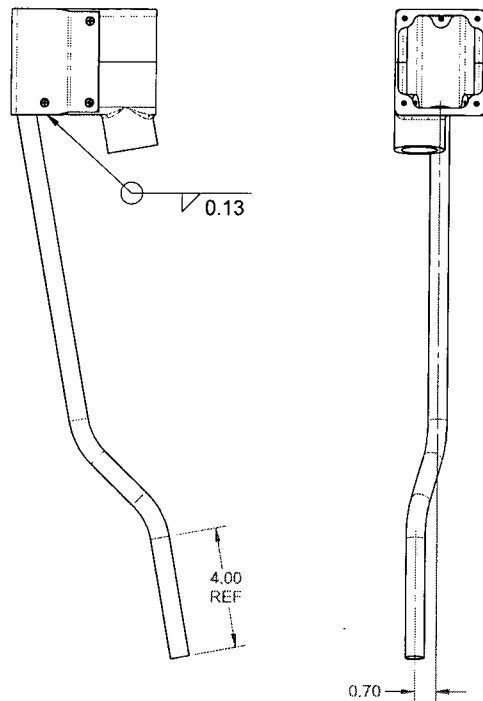


SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO 132824 ML3
150511

PRELIMINARY ISSUE

A	NEW ISSUE	VS	14.09.10
REV.		DESCRIPTION	BY DATE
DESIGN	VS	DART AEROSPACE LTD	
DRAWN	VS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. A
MFG. APPR.	JFS	D5155	SHEET 1 OF 14
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	CO-PILOT COLLECTIVE HEAD	NTS
DATE	14.09.10	COPYRIGHT © 2013 BY DART AEROSPACE LTD	
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ITEM	QTY	P/N	DESCRIPTION
1	X	D5155-043	CO-PILOT COLLECTIVE HEAD ASSEMBLY (212)
2	1	D4410-7	CONDUIT
3	1	D5155-3	CO-PILOT COLLECTIVE HEAD (212)
4	1	D5155-11	CO-PILOT COLLECTIVE HEAD (212)
5	1	D5156-11	BACK PLATE
6	11	90296A108	HELI-COIL INSERT (6-32 X 0.276)
7	2	MS16562-130	SLOTTED SPRING PIN
8	7	MS24693-24B	SCREW, CSK 100°

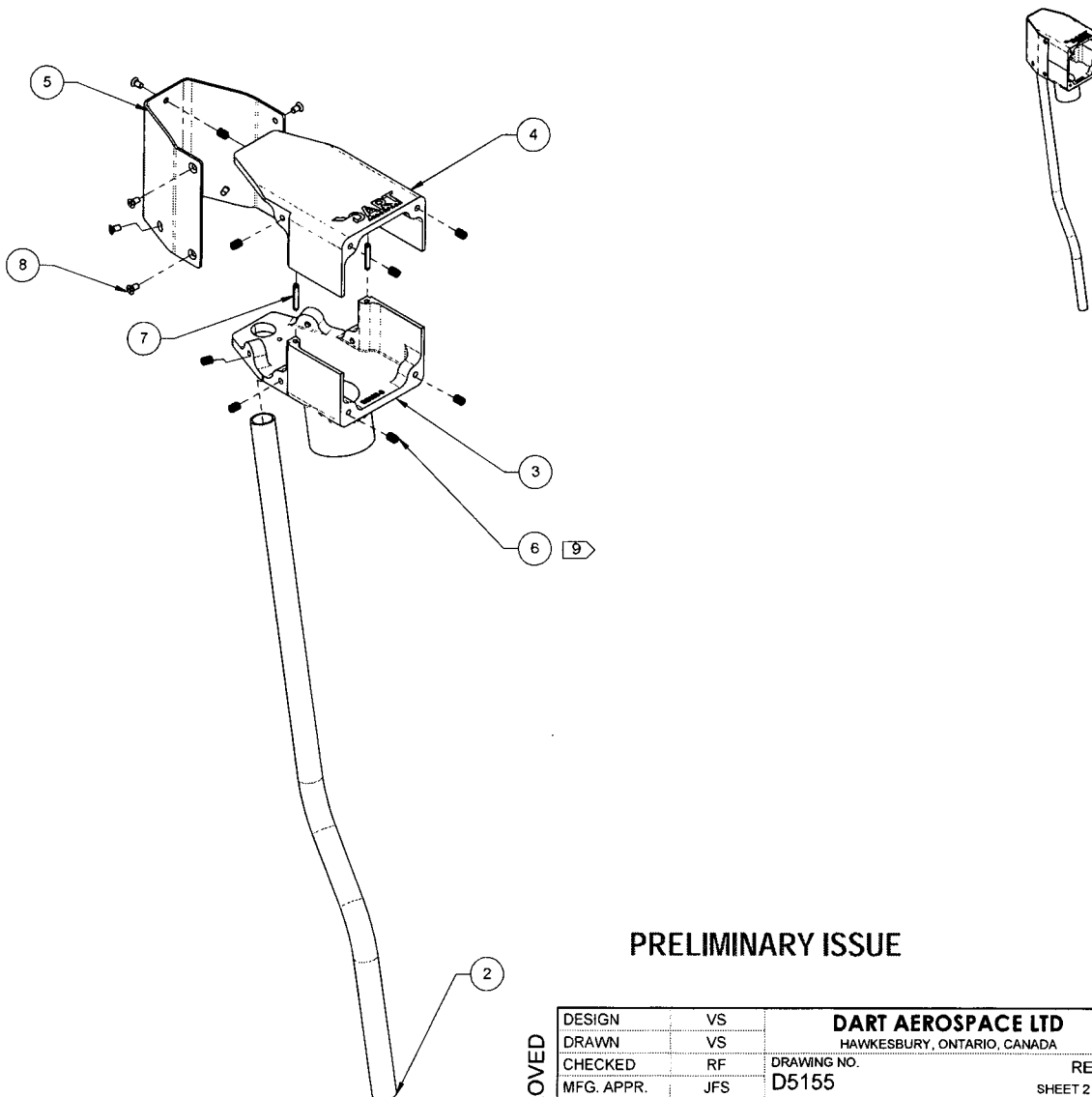


D5155-043 WELDING DETAIL

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: ANODIZE BLACK PER MIL-A-8625F TYPE I OR IB OR IC OR II OR IIB CLASS 2 AFTER WELDING
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 1.20 lbs
- 8) WELD PER DART QSI 004
- 9) INSTALL AFTER ANODIZING

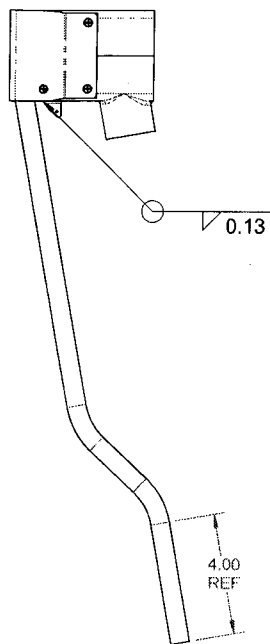
D5155-043 CO-PILOT COLLECTIVE HEAD ASSY (212)



PRELIMINARY ISSUE

APPROVED	DESIGN	VS	DART AEROSPACE LTD	
	DRAWN	VS	HAWKESBURY, ONTARIO, CANADA	
	CHECKED	RF	DRAWING NO.	REV. A
	MFG. APPR.	JFS	D5155	SHEET 2 OF 14
	APPROVED	HS	TITLE	SCALE
	DE APPR.	DS	CO-PILOT COLLECTIVE HEAD	
	DATE	14.09.10	COPYRIGHT © 2013 BY DART AEROSPACE LTD	
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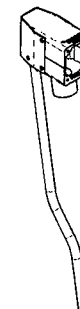
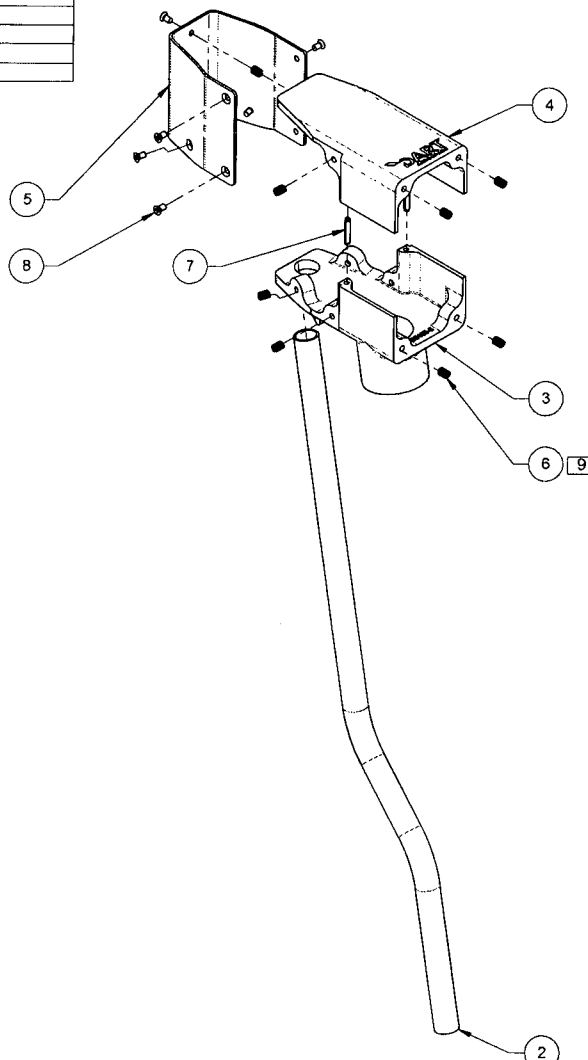
ITEM	QTY	P/N	DESCRIPTION
1	X	D5155-045	CO-PILOT COLLECTIVE HEAD ASSEMBLY (EAGLE SINGLE)
2	1	D4410-7	CONDUIT
3	1	D5155-5	CO-PILOT COLLECTIVE HEAD (EAGLE SINGLE)
4	1	D5155-9	CO-PILOT COLLECTIVE HEAD (205)
5	1	D5156-9	BACK PLATE
6	11	90296A108	HELI-COIL INSERT (6-32 X 0.276)
7	2	MS16562-130	SLOTTED SPRING PIN
8	7	MS24693-24B	SCREW, CSK 100*



D5155-045 WELDING DETAIL



D5155-045 CO-PILOT COLLECTIVE HEAD ASSY (EAGLE SINGLE)



NOTES:

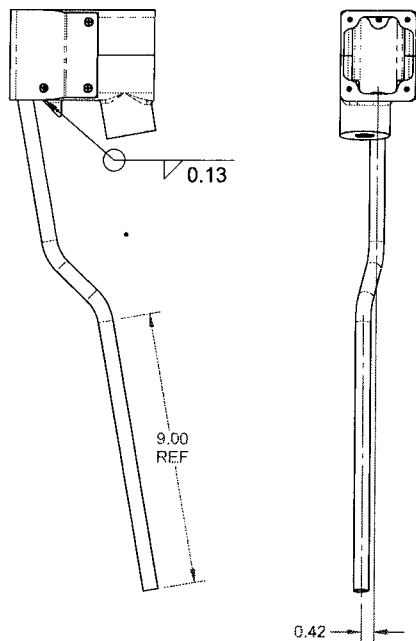
- 1) MATERIAL: N/A
- 2) FINISH: ANODIZE BLACK PER MIL-A-8625F TYPE I OR IB OR IC OR II OR IIB CLASS 2 AFTER WELDING
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 1.06 lbs
- 8) WELD PER DART QSI 004
- 9) INSTALL AFTER ANODIZING

PRELIMINARY ISSUE

DESIGN	VS	DART AEROSPACE LTD	
DRAWN	VS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. A
MFG. APPR.	JFS	D5155	SHEET 3 OF 14
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	CO-PILOT COLLECTIVE HEAD	NTS
DATE	14.09.10	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE REPRODUCED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

APPROVED

ITEM	QTY	P/N	DESCRIPTION
1	X	D5155-047	CO-PILOT COLLECTIVE HEAD ASSEMBLY
2	1	D5054-1	CONDUIT
3	2	D5073-1	SNAP RING
4	1	D5155-7	CO-PILOT COLLECTIVE HEAD (205)
5	1	D5155-9	CO-PILOT COLLECTIVE HEAD (205)
6	1	D5156-9	BACK PLATE
7	11	90296A108	HELI-COIL INSERT (6-32 X 0.276)
8	2	MS16562-130	SLOTTED SPRING PIN
9	7	MS24693-24B	SCREW, CSK 100*
10	1	MS27641-3	BEARING

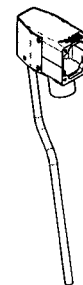
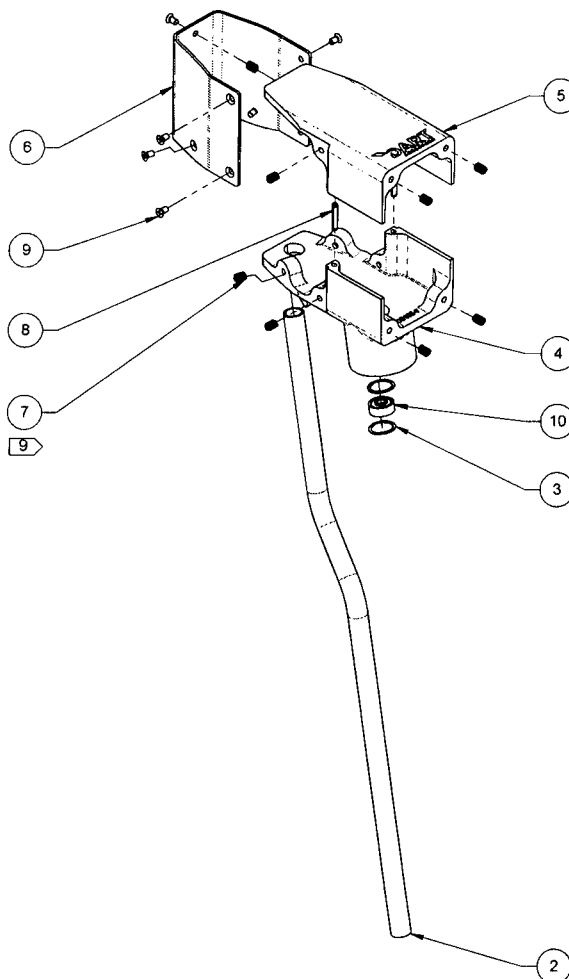


D5155-047 WELDING DETAIL

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: ANODIZE BLACK PER MIL-A-8625F TYPE I OR IB OR IC OR II OR IIB CLASS 2 AFTER WELDING
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 1.13 lbs
- 8) WELD PER DART QSI 004
- 9) INSTALL AFTER ANODIZING

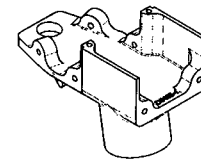
**D5155-047 CO-PILOT COLLECTIVE HEAD ASSY
FOR 205 WITH 204-001-290-5 STICK AND THROTTLE ASSEMBLY INSTALLED**



PRELIMINARY ISSUE

DESIGN	VS	DART AEROSPACE LTD	
DRAWN	VS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. A
MFG. APPR.	JFS	D5155	SHEET 4 OF 14
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	CO-PILOT COLLECTIVE HEAD	NTS
DATE	14.09.10	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

APPROVED



A

- D5155-1 CO-PILOT COLLECTIVE HEAD (205)

APPROVED

3

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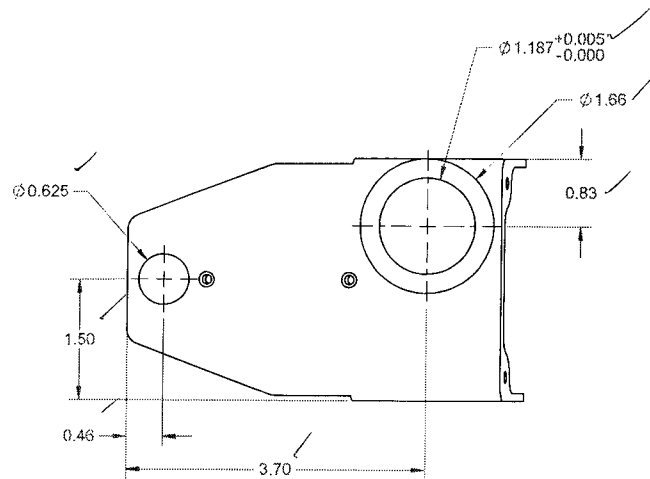


B5-5

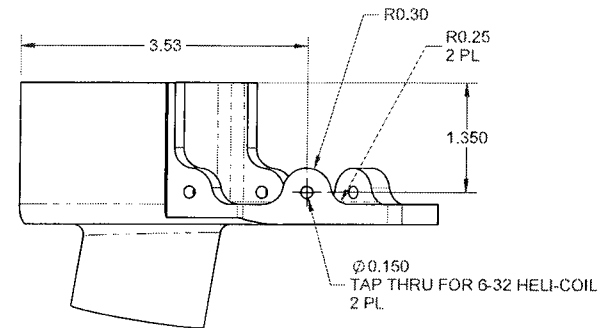


DESIGN	VS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D5155 TITLE CO-PILOT COLLECTIVE HEAD COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS UNDERSTANDING THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.	REV. A
DRAWN	VS		SHEET 6 OF 14
CHECKED	RF		SCALE
MFG. APPR.	JFS		NTS
APPROVED	HS		
DE APPR.	DS		
DATE 14.09.10			

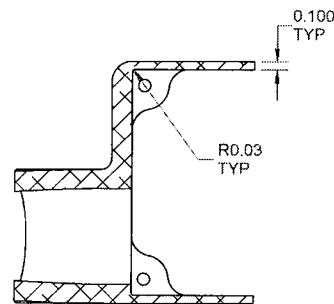
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VIEW G-G
B6-7



VIEW H-H
D7-7



SECTION I-I
D6-7

PRELIMINARY ISSUE

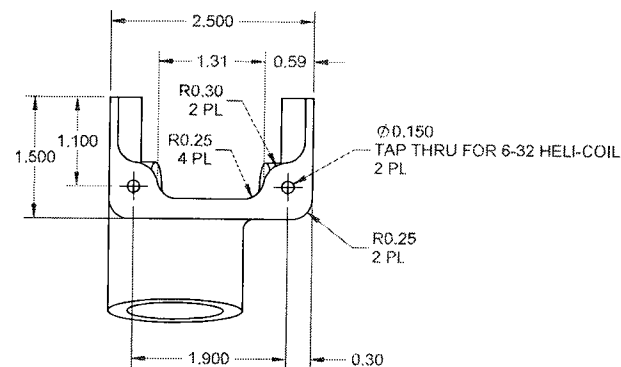
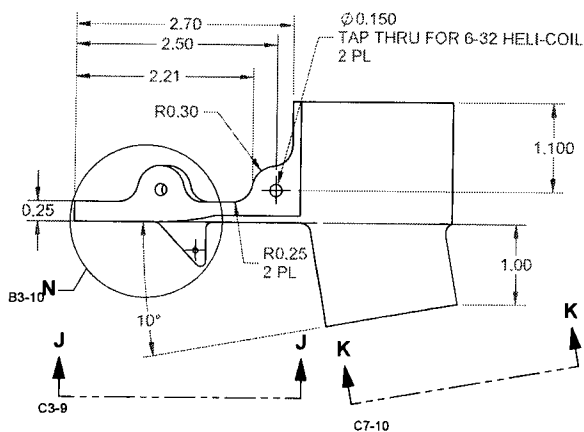
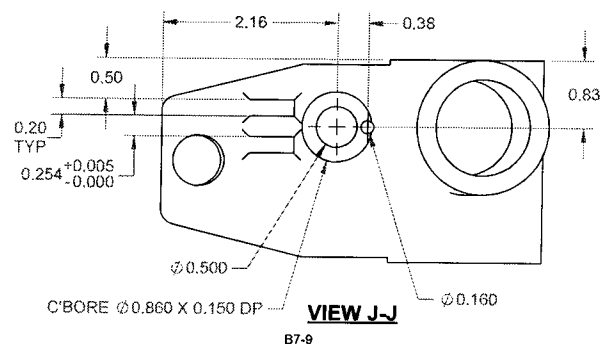
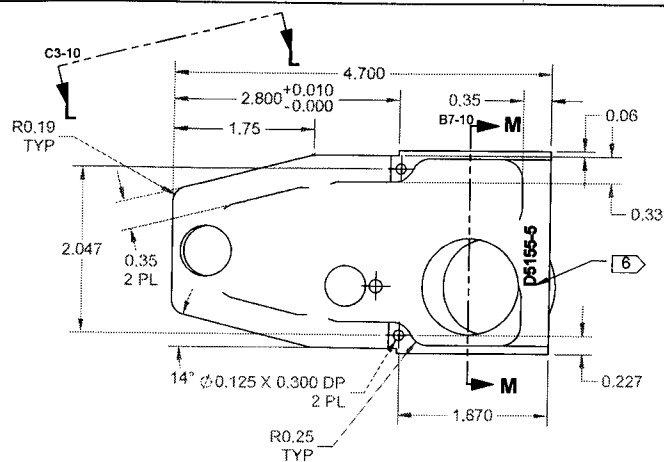
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: N/A

D5155-3 CO-PILOT COLLECTIVE HEAD (212)
DETAIL VIEWS

APPROVED

DESIGN	VS	DART AEROSPACE LTD	
DRAWN	VS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. A
MFG. APPR.	JFS	D5155	SHEET 8 OF 14
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	CO-PILOT COLLECTIVE HEAD	NTS
DATE	14.09.10	COPYRIGHT © 2013 BY DART AEROSPACE LTD	
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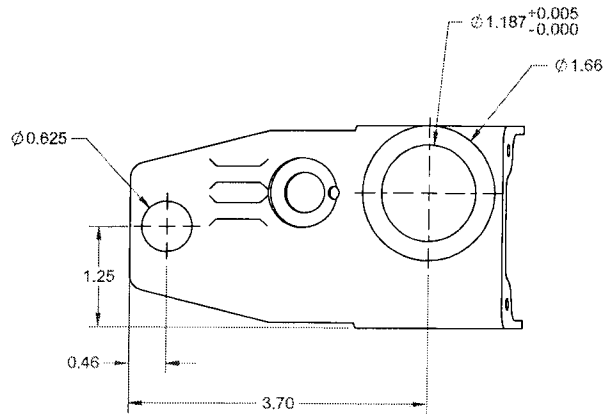
NOTES:

- 1) MATERIAL: 6061-T6/T651/T6511/T62 ALUMINUM BAR
PER QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
REF DART SPEC M6061T6B
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.3 IN THIS AREA TO MAX DEPTH
OF 0.010 WITH A MIN. TOOL RAD OF R0.010
- 7) WEIGHT: 0.45 lbs
- 8) UNDIMENSIONED FEATURES DEFINED BY D5155-5.SLDPRT

D5155-5 CO-PILOT COLLECTIVE HEAD (EAGLE SINGLE)

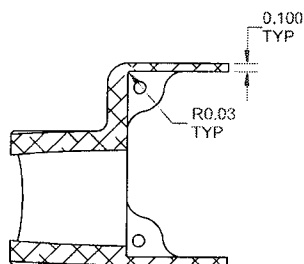
PRELIMINARY ISSUE

APPROVED	DESIGN	VS	DART AEROSPACE LTD	
	DRAWN	VS	HAWKESBURY, ONTARIO, CANADA	
	CHECKED	RF	DRAWING NO.	REV. A
	MFG. APPR.	JFS	D5155	SHEET 9 OF 14
	APPROVED	HS	TITLE	SCALE
	DE APPR.	DS	CO-PILOT COLLECTIVE HEAD	NTS
DATE		14.09.10	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



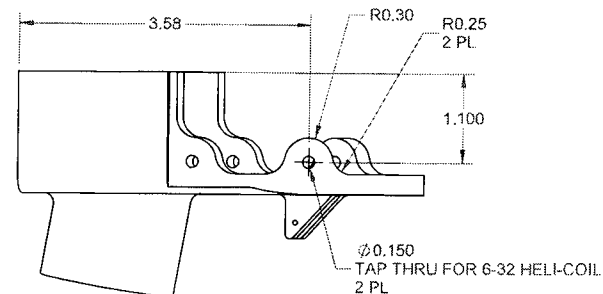
VIEW K-K

B6-9



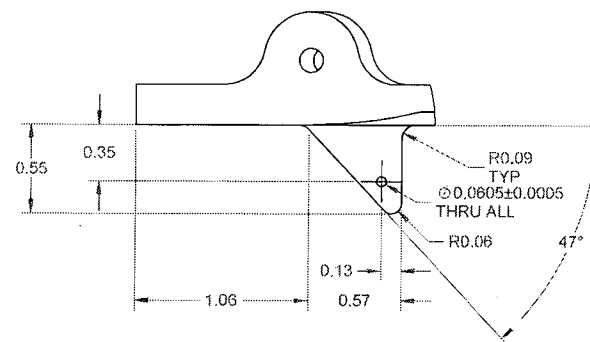
SECTION M-M

D6-9



VIEW L-L

D7-9



DETAIL N

B7-9

PRELIMINARY ISSUE

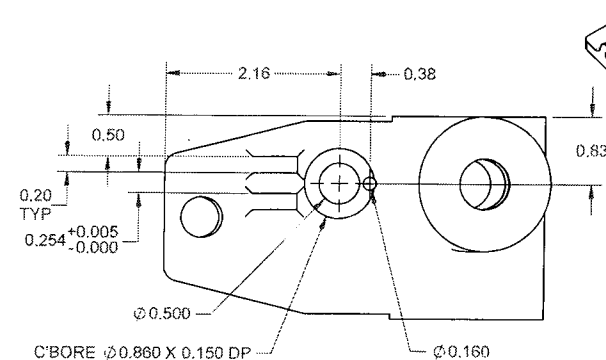
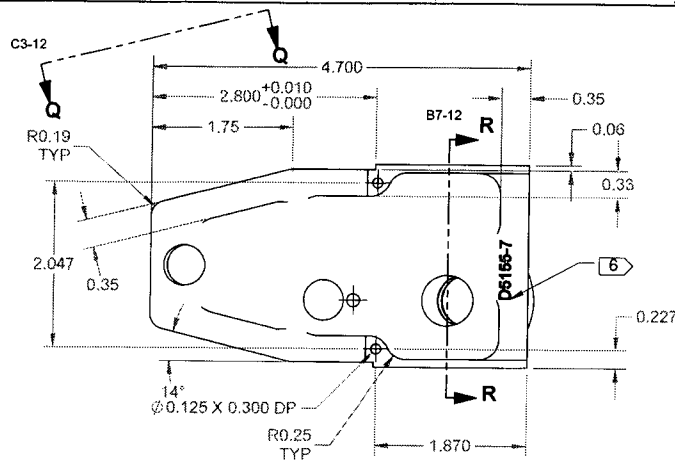
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: N/A

D5155-5 CO-PILOT COLLECTIVE HEAD (EAGLE SINGLE)
DETAIL VIEWS

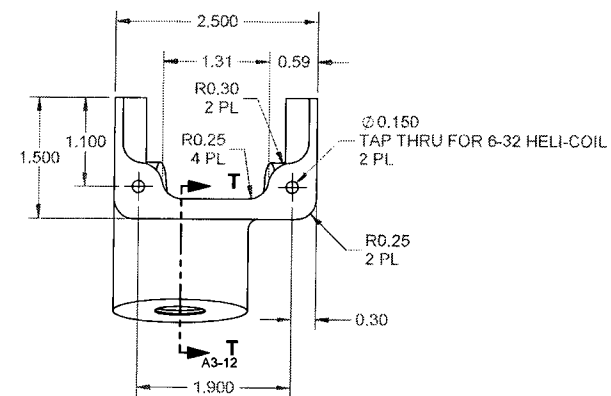
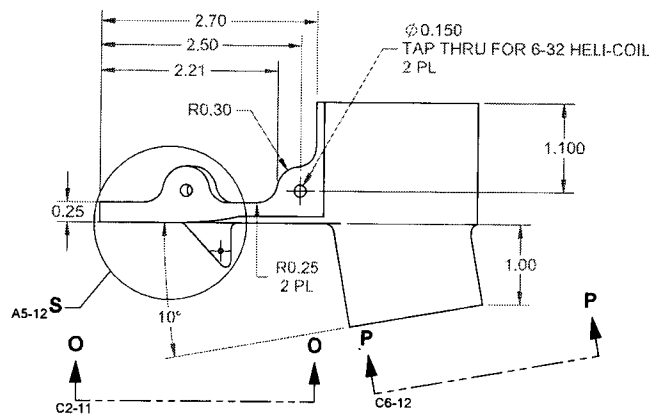
APPROVED

DESIGN	VS	DART AEROSPACE LTD	
DRAWN	VS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. A
MFG. APPR.	JFS	D5155	SHEET 10 OF 14
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	CO-PILOT COLLECTIVE HEAD	NTS
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VIEW O-O

B7-11



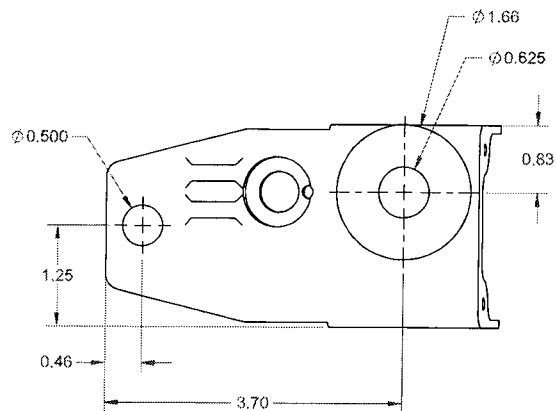
NOTES:

- 1) MATERIAL: 6061-T6/T651/T6511/T62 ALUMINUM BAR
PER QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
REF DART SPEC M6061T6B
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.3 IN THIS AREA TO MAX DEPTH
OF 0.010 WITH A MIN. TOOL RAD OF R0.010
- 7) WEIGHT: 0.56 lbs
- 8) UNDIMENSIONED FEATURES DEFINED BY D5155-7.SLDPRT

D5155-7 CO-PILOT COLLECTIVE HEAD (205)

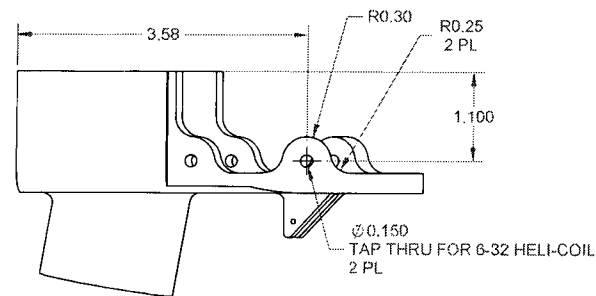
PRELIMINARY ISSUE

APPROVED	DESIGN	VS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
	DRAWN	VS		
	CHECKED	RF	DRAWING NO.	REV. A
	MFG. APPR.	JFS	D5155	SHEET 11 OF 14
	APPROVED	HS	TITLE	SCALE
	DE APPR.	DS	CO-PILOT COLLECTIVE HEAD	NTS
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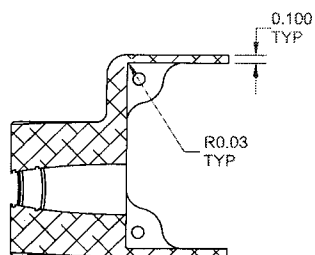
VIEW P-P

B5-11



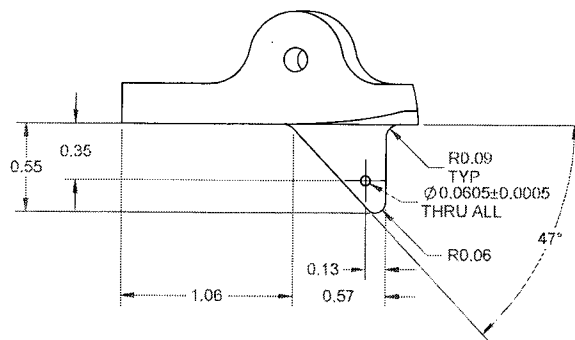
VIEW Q-Q

D7-11



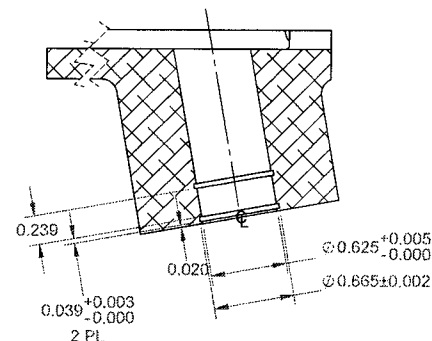
SECTION R-R

C6-11



DETAIL S

B6-11



SECTION T-T

B2-11

NOTES:

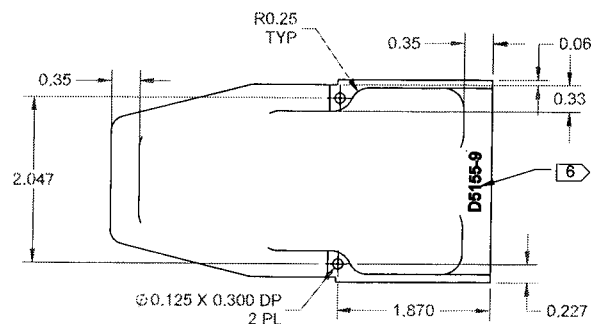
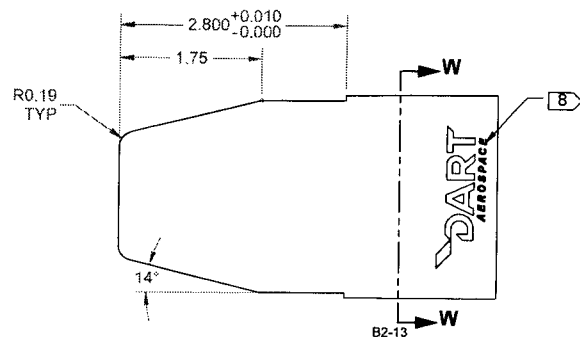
- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: N/A

D5155-7 CO-PILOT COLLECTIVE HEAD (205)

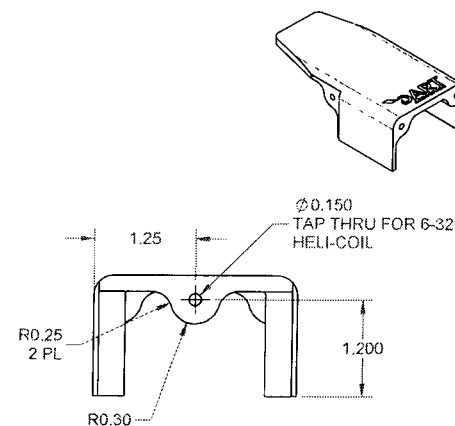
DETAIL VIEWS

PRELIMINARY ISSUE

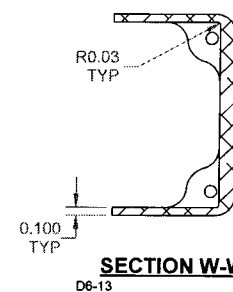
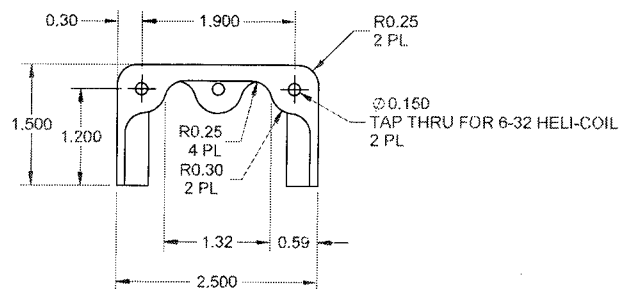
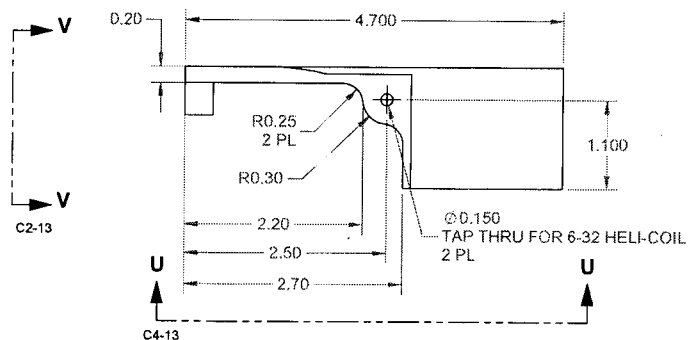
APPROVED	DESIGN	VS	DART AEROSPACE LTD	
	DRAWN	VS	HAWKESBURY, ONTARIO, CANADA	
	CHECKED	RF	DRAWING NO.	REV. A
	MFG. APPR.	JFS	D5155	SHEET 12 OF 14
	APPROVED	HS	TITLE	SCALE
	DE APPR.	DS	CO-PILOT COLLECTIVE HEAD	NTS
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VIEW U-U
B7-13



VIEW V-V
B8-13



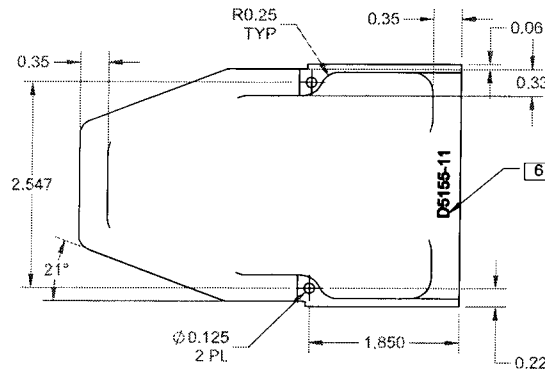
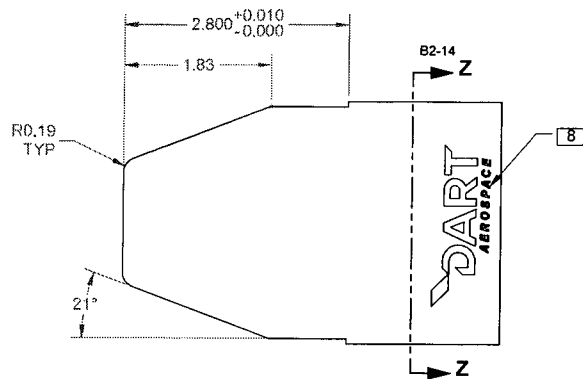
NOTES:

- 1) MATERIAL: 6061-T6/T651/T6511/T62 ALUMINUM BAR
PER QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
REF DART SPEC M6061T6B
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.3 IN THIS AREA TO MAX DEPTH
OF 0.010 WITH A MIN. TOOL RAD OF R0.010
- 7) WEIGHT: 0.31 lbs
- 8) ENGRAVE "DART" LOGO AS SHOWN 0.003-0.005 DP
- 9) UNDIMENSIONED FEATURES DEFINED BY D5155-9.SLDPRT

D5155-9 CO-PILOT COLLECTIVE HEAD (205)

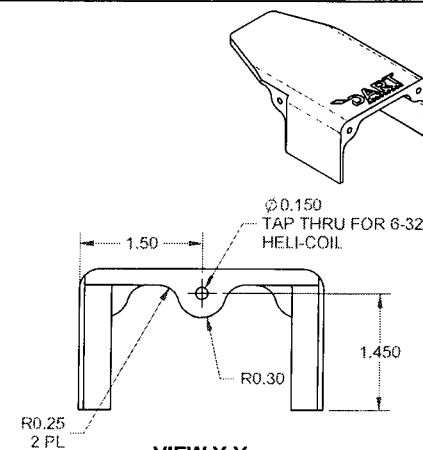
PRELIMINARY ISSUE

APPROVED	DESIGN	VS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
	DRAWN	VS		
	CHECKED	RF	DRAWING NO.	REV. A
	MFG. APPR.	JFS	D5155	SHEET 13 OF 14
	APPROVED	HS	TITLE	SCALE
	DE APPR.	DS	CO-PILOT COLLECTIVE HEAD	NTS
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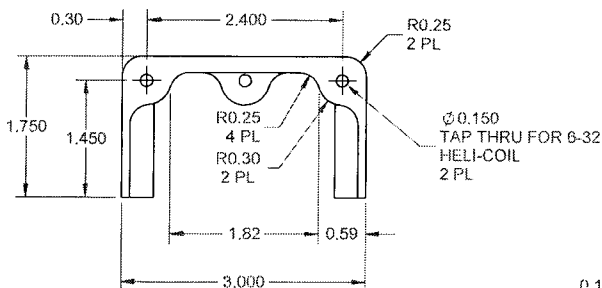
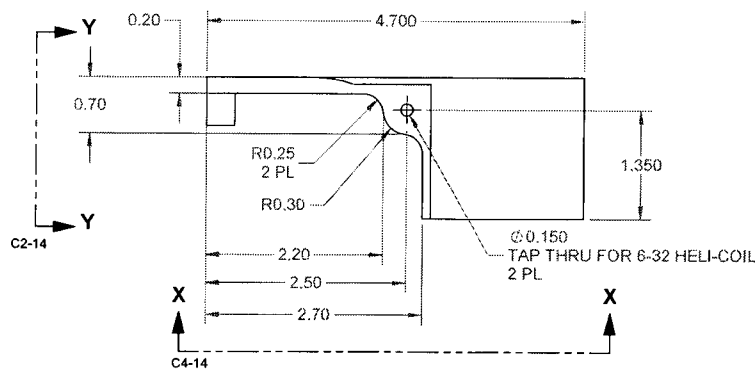
VIEW X-X

B6-14



VIEW Y-Y

B8-14



0.100
TYP

SECTION Z-Z

D6-14

NOTES:

- 1) MATERIAL: 6061-T6/T651/T6511/T62 ALUMINUM BAR
PER QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
REF DART SPEC M6061T6B
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.3 IN THIS AREA TO MAX DEPTH
OF 0.010 WITH A MIN. TOOL RAD OF R0.010
- 7) WEIGHT: 0.36 lbs
- 8) ENGRAVE "DART" LOGO AS SHOWN 0.003-0.005 DP
- 8) UNDIMENSIONED FEATURES DEFINED BY D5155-11.SLDPRT

D5155-11 CO-PILOT COLLECTIVE HEAD (212)

PRELIMINARY ISSUE

APPROVED	DESIGN	VS	DART AEROSPACE LTD	
	DRAWN	VS	HAWKESBURY, ONTARIO, CANADA	
	CHECKED	RF	DRAWING NO.	REV. A
	MFG. APPR.	JFS	D5155	SHEET 14 OF 14
	APPROVED	HS	TITLE	SCALE
	DE APPR.	DS	CO-PILOT COLLECTIVE HEAD	NTS
	DATE	14.09.10	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

DART AEROSPACE LTD		Work Order: 132824
Description: CD-PILOT COLLECTIVE HEAD		Part Number: DS755-3
Inspection Dwg: DS755 Rev: A		Page 1 of 1

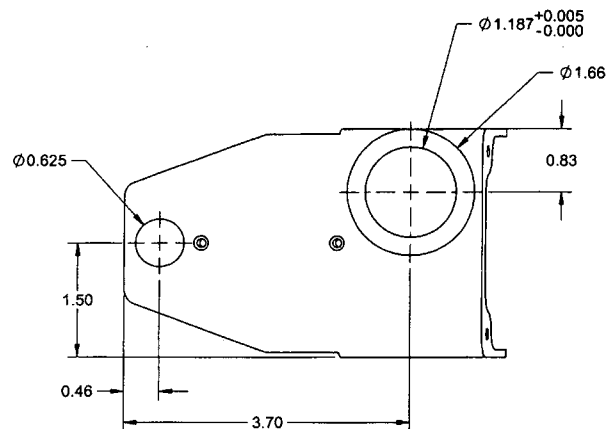
INSPECTION SHEET

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
4.700	±.010	4.697	—		Vern	M1-D6
.35	±.030	.345	—		"	
.06	±.030	.063	—		"	
.33	±.030	.328	—		"	
.227	±.040	.226	—		"	
1.850	±.010	1.843	—		"	
R.25	±.030	R.250	—		R-G	
Ø.125 X .300	±.004 X ±.010	Ø.125 X .300	—		G-pin	
21°	±1/2°	21°	—		G-square	
2.547	±.005	2.547	—		Vern	M1-D6
.35	±.030	.350	—		"	
R.19	±.030	R.190	—		R-G	
2.800	±.005	2.801	—		H-G	31006
Ø.116 X	±.004	Ø.117	—		Vern	M1-D6
Ø.188 X 100°	±.010 X ±1/2°	Ø.188 X 100°	—		"	
1.782	±.005	1.782	—		"	
1.92	±.030	1.914	—		"	
1.50	±.030	1.500	—		"	
1.750	±.010	1.752	—		"	
1.350	±.010	1.350	—		"	
3.000	±.010	3.000	—		"	
1.81	±.030	1.810	—		"	
.59	±.030	.590	—		"	
R.25	±.030	R.250	—		R-G	
R.30	±.030	R.300	—		"	
Ø.150	±.004	Ø.150	—		Ø Vern	M1-D6
R.25	±.030	R.250	—		R-G	
.30	±.030	.300	—		Vern	M1-D6
2.400	±.005	2.400	—		"	
2.700	±.030	2.702	—		H-G	31006
2.50	±.030	2.500	—		"	
Ø.150	±.004	Ø.150	—	DAS	Vern	M1-D6

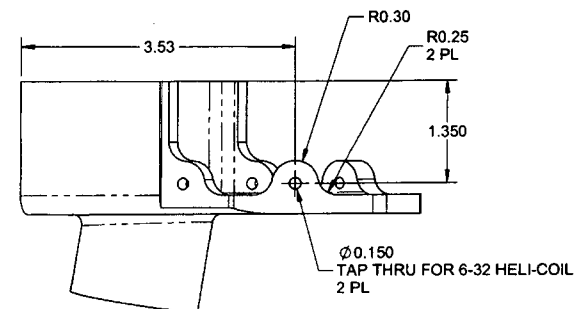
Measured by: <i>mf</i>	Checked by: 44 9-89	QC Inspector:
Date: 15/05/14	Date: 15/05/19	Date:

Engineering Approval: (If necessary)	Date:
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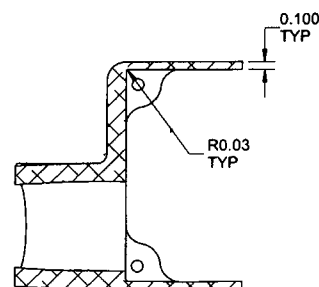
Rev	Date	Change	Revised by	Approved
B	14.07.31	New Issue	KJ	



VIEW G-G
B6-7



VIEW H-H
D7-7



SECTION I-I
D6-7

- NOTES:**
- 1) MATERIAL: N/A
 - 2) FINISH: N/A
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: N/A
 - 7) WEIGHT: N/A

D5155-3 CO-PILOT COLLECTIVE HEAD (212)
DETAIL VIEWS

RELEASED

2015 MAY 11

APPROVED	DESIGN	VS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
	DRAWN	VS		
	CHECKED	RF	DRAWING NO.	REV. A
	MFG. APPR.	JFS	D5155	SHEET 8 OF 14
	APPROVED	HS	TITLE	SCALE
	DE APPR.	DS	CO-PILOT COLLECTIVE HEAD	NTS
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